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**United States Patent** [19][11] **Patent Number:** **5,164,712****Niitsuma**[45] **Date of Patent:** **Nov. 17, 1992**[54] **X-Y DIRECTION INPUT DEVICE**[75] **Inventor:** Hirofumi Niitsuma, Iwaki, Japan[73] **Assignee:** Alps Electric Co., Ltd., Tokyo, Japan[21] **Appl. No.:** 564,810[22] **Filed:** Aug. 8, 1990[30] **Foreign Application Priority Data**

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[51] **Int. Cl.<sup>5</sup>** ..... G09G 3/02[52] **U.S. Cl.** ..... 340/706; 340/709[58] **Field of Search** ..... 340/706, 709, 710;  
178/18; 74/471 XY, 471 R; 273/148 B[56] **References Cited****U.S. PATENT DOCUMENTS**

3,799,049	1/1989	Avila	340/710
3,823,634	4/1989	Culver	340/710
4,712,101	12/1989	Culver	
4,896,554	1/1990	Culver	340/710

4,928,093 5/1990 Rahman ..... 340/709

4,937,564 6/1990 Oberg ..... 340/710

4,982,618 1/1991 Culver ..... 340/710

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## [57]

**ABSTRACT**

Disclosed is an X-Y direction input device for moving a cursor on a screen in a suitable direction, the device comprising a rotatable rotation operating member, a first rotary type electric part for detecting a rotational amount of the rotating operating member, a slide operating member capable of being reciprocated in a direction of a rotational axis of the rotation operating member, and a second rotary type electric part for detecting an amount of movement of the slide operating member.

**4 Claims, 9 Drawing Sheets**